

CORROSION RESISTANT CERAMIC MATERIAL

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Inventor: MINAMIZAWA KAZUSUKE; HAYASAKA HIROTO;
OTAKI HIROMICHI; KISHI YUKIO
Applicant: NIPPON SERATEKKU:KK;; TAIHEIYO CEMENT CORP
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Abstract of JP2000001362

PROBLEM TO BE SOLVED: To obtain a corrosion resistant ceramic material having high resistance to halogen plasma by using an oxide contg. one or more of the group IIIa elements in the Periodic Table and one or more of the group IVa elements in the Periodic Table as a base.

SOLUTION: The ceramic material is based on a multiple oxide contg. one or more of the group IIIa elements in the Periodic Table such as Sc, Y and La and one or more of the group IVa elements in the Periodic Table such as Ti, Zr and Hf, e.g. Y₂TiO₂ or LaTiO₅ and has $\leq 1.0 \mu\text{m}$ center line average roughness. A mixture having $\leq 5 \mu\text{m}$ particle diameter and $\geq 98\%$ purity is prepd. by mixing oxide of one or more of the group IIIa elements in the Periodic Table with oxide of one or more of the group IVa elements in the Periodic Table in a prescribed ratio, a sintering auxiliary such as SiO₂ is added to the mixture and mixed, and the resultant powdery mixture is molded in a prescribed shape with a uniaxial press or the like, fired at 1,100-1,900 deg.C and subjected to hot isostatic pressing at 900-1,100 deg.C and $\geq 1,000 \text{ kgf/cm}^2$ to obtain the ceramic material.

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